REMARKS

The Office Action indicated that the subject matter of Claims 21 and 22 were allowable if rewritten in independent form. Applicant requests that the drafting of those claims in independent form be held in abeyance until the following is considered.

Applicant has amended Claim 1 in a manner that is believed to substantially provide the allowance of the subject matter as defined by the Examiner on Page 12.

The following Figures 7A and 8A disclose the advantages of the present invention, as follows:

FIG.7A

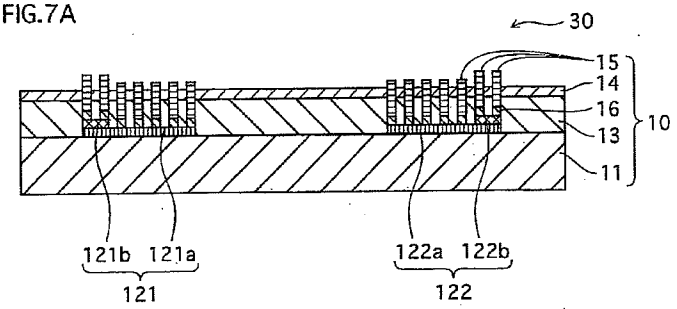
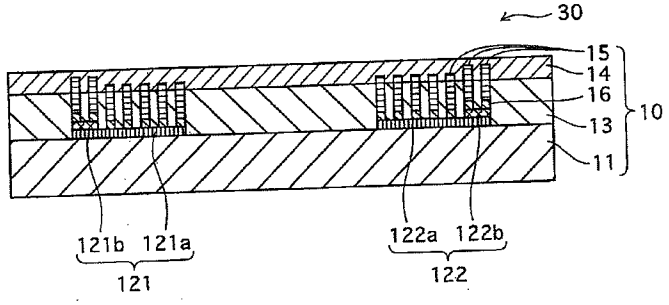


FIG.8A



As can be seen, the needle crystals 15 can be disposed in an upright position from the surface of the display electrodes. Figure 7A discloses the needle crystals extending through the protective film while Figure 8A discloses the protective film having sufficient thickness to cover the tips of the needle crystals.

In both embodiments, the gaps between the needle crystals are layered with a respective dielectric film and the protective film.

In the embodiment of Figure 7A, the protective film can work to decrease the level of discharge voltage required by efficiently emitting secondary electrons into the discharge space 30, as well as by maintaining its ability to protect the dielectric film and the display electrodes from any erosion by ions created by the discharge.

In both the embodiments of Figures 7A and 8A, electrons are supplied via the needle crystals, with electrons being supplied directly to the discharge space in the embodiment of Figure 7A, while any disruptions in the protective film can further allow electrons to also be supplied in addition to the electrons being injected into the conduction band of the MgO crystals in the embodiment of Figure 8A. As a result, a high secondary electron emission coefficient is obtained enabling a reduction in the discharge firing voltage which can be of particular importance as plasma display panels become larger, resulting in an increase in both power requirements and production of heat.

Thus, our invention is now defined by our amended Claim 1 to accomplish the above features as set forth in the Effects of the Invention in Paragraph 0013 as follows:

> Electrons are supplied from the electrodes to the discharge space via the needle crystals following the application of a voltage to the electrodes, particularly in the case where the needle crystals are disposed substantially perpendicular to the main surface of the front substrate to penetrate the dielectric film in a thickness direction, and the dielectric film material and the protective film material are layered to completely fill the gaps between the needle crystals. In this way, the discharge firing voltage and discharge variability can be reduced, evenly through the action of electrons supplied to the discharge space via the needle crystals when a voltage is applied to the electrodes.

The Office Action rejected Claims 1-3 and 9-10 as being anticipated by Japanese Laid-Open Application No. 2002-117771 to *Seiki et al.*

Additionally, Claims 1, 11-13, 15, 18, 20 and 23 were rejected by WO 2004/086449 to *Kim et al.*

> "An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed in the prior art and that such existence would be recognized by persons of ordinary skill in the field of the invention." *See In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 678, 7 USPQ2d 1315, 1317 (Fed. Cir. 1988).

Seiki et al. discloses that a protective layer covering the electrodes of a PDP includes a diamond-like carbon, so as to both realize high luminance and high luminous efficiency in plasma display panels (PDP). However, *Seiki et al.* does not disclose that the diamond particles penetrate the dielectric layer (as shown in Figure 3 of *Seiki et al.*, the diamond particle 12 only penetrate the MgO film 14, but not the dielectric layer 5).

Kim et al. discloses a PDP comprising a lower dielectric layer 400 and an upper dielectric layer 410, a protective film 500, and a transparent substrate 200 made of glass having a transparent electrode 300 and a bus electrode 310 positioned thereon. In this PDP, nano tips 610 are arranged to partially penetrate the upper dielectric layer 410, thereby reducing the discharge voltage. Again, the needle crystals (nano tips 610) penetrate the upper dielectric layer 410, but not the lower dielectric layer 400.

As described above, neither *Seiki et al.* nor *Kim et al.* disclose the current characteristics of the Claim 1 of the present application after amendment, namely "a plurality of needle crystals composed of a conductive substance or a semiconductor substance are disposed to reach the protective film by penetrating the dielectric film in a thickness direction from a surface of the electrodes."

Furthermore, neither of the disclosures by *Seiki et al.* and *Kim et al.* can achieve the advantageous effect of our invention, namely "electrons are supplied from the electrodes to the discharge space via the needle crystals."

The Office Action rejected Claims 4 and 6 as being obvious over *Seiki et al.* in view of *Kim et al.*

> It is the Examiner's burden to establish *prima facie* obviousness. *See In re Rijckaert*, 9 F.3d 1531, 1532 (Fed. Cir. 1993) Obviousness requires a suggestion of all the elements in a claim *(CFMT, Inc. v. Yieldup Int'l Corp.,* 349 F.3d 1333, 1342 (Fed. Cir. 2003)) and "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). Here, we find that the Examiner has not identified all the elements of claim 1, nor provided a reason that would have prompted the skilled worker to have arranged them in the manner necessary to reach the claimed invention.
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> *Ex parte* Karoleen B. Alexander, No. 2007-2698, slip op. at 6 (B.P.A.I. Nov. 30, 2007)

As mentioned above, both *Seiki et al.* and *Kim et al.* fail to teach a plurality of needle crystals extending from a surface of the electrode and penetrating the dielectric film in a thickened direction as set forth in our current claims. Accordingly, the combination of these disclosures are also lacking in teaching our invention.

Claims 16 and 17 were rejected as obvious over *Kim et al.* in view of U.S. Patent Publication 2002/0060514 to *Nakamoto* and EP 0325799 to *Yoshinaka et al.*

Nakamoto taught microbodies of telepod-shaped zinc oxide while *Yoshinaka et al.* was cited to disclose that zinc oxide particles improved electrical properties. However, neither of due references would teach the needle crystals of *Kim et al.* to be juxtapositioned relative to a dielectric film and a protective film for a PDP in the manner set forth in our current claims.

Finally, Claim 19 was rejected over *Kim et al.* and *Seiki et al.* with an assertion it would be obvious to one of ordinary skill in the art by the needle crystals of *Kim et al.* in a particle layer of *Seiki et al.*

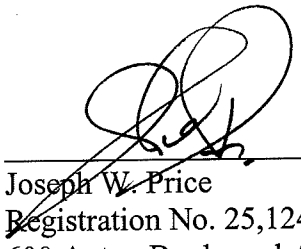
Applicant has amended the independent Claim 19 in a manner that is believed to incorporate the allowed subject matter already found in the Office Action which admittedly is not taught by the cited references. Thus, it is submitted that dependent Claim 19 is patentable for the reasons cited above.

In summary, it is believed that the current claims are now distinguishable over the references of record and are consistent with the indication of allowable subject matter and the application is in condition for allowance.

If the Examiner believes a telephone interview will assist in the prosecution of this matter, undersigned attorney can be contacted at the listed telephone number.

Very truly yours,

SNELL & WILMER L.L.P.



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